

5

CLAIMS

What is claimed is:

1. A method of providing broadcast services in a wireless communication network, comprising:
 - a. transmitting a broadcast stream originating at a content provider to one or more mobile stations over a forward link broadcast channel;
 - b. monitoring utilization of forward link air interface resources; and
 - c. dynamically adjusting the forward link air interface resources allocated to the broadcast stream responsive to changes in the utilization of forward link air interface resources; and
 - 15 d. scaling the quality of the broadcast stream responsive to adjustments to the allocated forward link air interface resources.
2. The method claim 1 wherein scaling the quality of the broadcast stream comprises changing the number of layers in the broadcast stream encoded with a layered coding algorithm.
- 20 3. The method of claim 2 wherein changing the number of layers in the broadcast stream encoded with a layered coding algorithm comprises inputting into a stream manager a broadcast stream with a first number of layers within the wireless communication network, changing the number of layers in the broadcast stream by the stream manager, and outputting from the stream manager a broadcast stream with a second number of layers from network node for transmission to the mobile stations.
- 25 4. The method of claim 3 wherein the broadcast stream input to the stream manager comprises a single stream containing said first number of layers.
- 30

5

5. The method of claim 4 wherein the broadcast stream output from the stream manager comprises a single stream containing the second number of layers.

6. The method of claim 4 wherein the broadcast stream output from the stream manager comprises multiple streams, each corresponding to one of the second number of layers.

7. The method of claim 3 wherein the broadcast stream input to the stream manager comprises multiple streams.

15

8. The method of claim 7 wherein each input stream to the stream manager corresponds to one of the first number of layers.

9. The method of claim 8 wherein the broadcast stream output from the stream manager comprises a single stream containing selected layers corresponding to the multiple input streams.

20

10. The method of claim 9 wherein the broadcast stream output from the stream manager comprises one or more streams corresponding to selected layers.

25

11. The method of claim 7 wherein each input stream to the stream manager comprises a group of one or more layers.

12. The method of claim 11 wherein the output stream from the stream manager is a single stream corresponding to a selected group.

30

5

13. The method of claim 1 wherein scaling the quality of the broadcast stream comprises changing the encoding of the broadcast stream.

14. The method of claim 1 wherein monitoring utilization of forward link air interface resources comprises monitoring transmit power allocation on one or more forward link channels.

15. The method of claim 1 wherein monitoring utilization of forward link air interface resources comprises monitoring Walsh code allocation on one or more dedicated forward link channels.

16. The method of claim 1 wherein monitoring utilization of forward link air interface resources comprises monitoring time slot allocation on one or more shared forward link channels.

20

17. The method of claim 1 further comprising transmitting broadcast service parameters to the mobile stations to indicate the forward link air interface resources dedicated to the broadcast stream.

18. The method of claim 17 wherein the broadcast service parameters indicate the scaling applied to the broadcast stream transmitted over the air interface.

19. The method of claim 18 wherein the broadcast service parameters transmitted to the mobile stations include a mode identifier that identifies a set of broadcast service parameters for the broadcast stream.

5

20. The method of claim 17 wherein the broadcast service parameters transmitted to the mobile stations include an action time parameter indicating in advance when the broadcast parameters will be effective.

10

21. The method of claim 1 wherein the content provider is an originating mobile station transmitting the broadcast stream over a reverse link channel to the wireless communication network.

15

22. The method of claim 21 further comprising determining a capacity of the reverse link broadcast channel, and scaling the quality of the broadcast stream for transmission over the reverse link channel.

20

23. The method of claim 22 further comprising limiting forward link air interface resources dedicated to the broadcast stream based on the quality of the broadcast stream transmitted over the reverse link channel.

25

24. The method of claim 22 further comprising limiting reverse link air interface resources dedicated to the broadcast stream based on the quality of the broadcast stream transmitted over the forward link broadcast channel.

30

25. The method of claim 1 wherein scaling the quality of the broadcast stream comprises adapting the content of the broadcast stream to the allocated forward link air interface resources.

5 26. A system for providing broadcast services in a mobile wireless communication network, comprising:

 a resource manager to monitor utilization of forward link air interface resources
 and to dynamically adjust the forward link air interface resources allocated
 to a broadcast stream responsive to changes in the utilization of forward
10 link air interface resources; and

 a stream manager to scale the quality of the broadcast stream responsive to
 adjustments to the allocated forward link air interface resources.

 27. The system claim 26 wherein the broadcast stream is encoded using a
15 layered coding algorithm and wherein the stream manager scales the quality of the
 broadcast stream by changing the number of layers in the broadcast stream.

 28. The system of claim 27 wherein the broadcast stream input to the stream
 manager comprises a single stream containing a first number of layers.

20

 29. The system of claim 28 wherein the broadcast stream output from the
 stream manager comprises a single stream containing a second number of layers less
 than or equal to the first number of layers.

25 30. The system of claim 28 wherein the broadcast stream output from the
 stream manager comprises multiple streams, each corresponding to one layer of the
 broadcast stream.

 31. The system of claim 27 wherein the broadcast stream input to the stream
30 manager comprises multiple streams.

5

32. The system of claim 31 wherein each input stream to the stream manager corresponds to one layer of the broadcast stream.

33. The system of claim 32 wherein the broadcast stream output from the stream manager comprises a single stream containing selected layers of the broadcast stream.

34. The system of claim 32 wherein the broadcast stream output from the stream manager comprises one or more streams corresponding to selected layers.

15

35. The system of claim 31 wherein each input stream to the stream manager comprises a group of one or more layers.

36. The system of claim 35 wherein the output stream from the stream manager is a single stream corresponding to a selected group.

20

37. The system of claim 26 wherein the stream manager scales the quality of the broadcast stream by changing the encoding of the broadcast stream.

38. The system of claim 26 wherein the resource manager monitors transmit power allocation on one or more forward link channels.

25

39. The system of claim 26 wherein the resource manager monitors Walsh code allocation on one or more dedicated forward link channels.

30

5 40. The system of claim 26 wherein the resource manager monitors time slot allocation on one or more shared forward link channels.

 41. The system of claim 26 wherein the resource manager transmits broadcast service parameters to the mobile stations to indicate the forward link air
10 interface resources dedicated to the broadcast stream.

 42. The system of claim 41 wherein the broadcast service parameters indicate the scaling applied to the broadcast stream transmitted over the air interface.

15 43. The system of claim 42 wherein the broadcast service parameters transmitted to the mobile stations include a mode identifier that identifies a set of broadcast service parameters for the broadcast stream.

 44. The system of claim 41 wherein the broadcast service parameters
20 transmitted to the mobile stations include an action time parameter indicating in advance when the broadcast parameters will be effective.

 45. The system of claim 26 wherein the broadcast stream originates at a mobile station transmitting the broadcast stream over a reverse link channel to the
25 wireless communication network.

 46. The system of claim 45 wherein the resource manager limits forward link air interface resources dedicated to the broadcast stream based on the quality of the broadcast stream transmitted over the reverse link channel from the originating mobile
30 station.

5

47. The system of claim 45 wherein the resource manager sends information comprising limiting reverse link air interface resources dedicated to the broadcast stream based on the scaling used for transmission over the forward link broadcast channel.

5 48. A method of providing broadcast services in a wireless communication network, comprising:

transmitting a broadcast stream on a forward broadcast channel to one or more

mobile stations; and

sending new session parameters associated with the broadcast stream to the

10 mobile stations including an action time parameter indicating when the

new session parameters will be effective.

49. The method of claim 48 wherein the new session parameters specify a
indicate a change in the quality of the broadcast stream.

15

50. The method of claim 48 wherein the new session parameters indicate a
change in the air interface resources used to deliver the broadcast stream.

5 51. A method of receiving broadcast services in a wireless communication network, comprising:

receiving a broadcast stream over a forward broadcast channel at a mobile station;

receiving a message at the mobile station containing new session parameters

10 including an action time parameter indicating when the new session parameters will be effective; and

reconfiguring the mobile station based on the new session parameters at the designated action time.

15 52. The method of claim 51 wherein the new session parameters indicate a change in the quality of the broadcast stream.

53. The method of claim 51 wherein the new session parameters indicate a change in the air interface resources used to deliver the broadcast stream.

20